TSJournal

April/May 2009

TSJ Interview with Roger Smith

TSJ: What specifically is PEO STRI doing in the Serious Games area and what are focus efforts for 2009?

Smith: Most of the industry is aware that at the end of 2008 we awarded a contract to LaserShot and Bohemia Interactive for the Virtual Battlespace 2 (VBS2) serious game. We have already begun replacing our previous installations of AMBUSH with VBS2, and will continue this through 2009. Under this contract, PEO-STRI acquired an Army-wide enterprise license for VBS2. This means that the software can be used by other organizations within the Army without paying additional licensing fees. This kind of Army-wide access will also apply to future modifications to the software and to the scenario databases that are created by our team and by the units who have the game.

We recognize that serious games are a valuable addition to the traditional live, virtual, and constructive categories of devices. Constructive simulations entered the Army's inventory with the advent of affordable computers in the 1970s. These were followed by an explosion of virtual simulators in the 1980s and distributed networks of simulators in the 1990s. In each case, new technologies and the systems that we created with them, expanded and enhanced the kind of training that could be offered to soldiers. None of these previous innovations eliminated the traditional live training. Similarly, we expect serious games like VBS2 to open the doors to new forms of training and to enhance the capabilities of the LVC systems and facilities that we already have.

PM ACTT has already integrated VBS2 with existing virtual and constructive simulations. The integration of games into the larger training picture began almost immediately after the acquisition. TRADOC's TCM-Gaming team has done similar integrations and has added an interface from the game to a C4I system.

TSJ: What is PEO STRI's definition of a Serious Game and how does it differ from a virtual or constructive simulation?

Smith: Dictionary quality definitions for the terms "virtual" and "constructive" did not emerge immediately after the creation of the first instances of these systems. Rather, the definitions evolved over a decade into something that was quotable and authoritative. The same has been happening with the term "serious game". There are several very good definitions floating around right now, but I think they will continue to evolve as the tools we acquire and field evolve in their capabilities and applications.

I would like to point to a few published definitions. In September 2005, Prof. Mike Zyda from the University of Southern California, published a paper in /IEEE Computer/ in which he offered the definition as, “a mental contest, played with a computer in accordance with specific rules that uses entertainment to further government or corporate training, education, health, public policy, and strategic communication objectives.”

In the much older book, /Serious Games/ published in 1970, Clark Abt from MIT suggested that “We are concerned with serious games in the sense that these games have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement.”

Both of these authors focused on the application and objective of the "serious game", rather than on the technology behind it. Abt's work preceded the computer game and he was referring to board games, card games, and role playing games. The important feature in both definitions is that these tools bring the power of entertainment to the field of education. Serious games capture the attention, interest, and competitive spirit that are an important part of engrossing entertainment. We then focus those on education, learning, and skill development.

One of the key features required by the Serious Games Showcase and Challenge is that a serious game, "be engaging and inspire repeated play." Being inspired to use the system is a big benefit in keeping the soldier's mind focused on the learning objective while also motivating him or her to choose to spend more time with the system than they would have if the "game" elements were not present.

TSJ: What are the key areas of interest/biggest potentials in Serious Games for PEO STRI and the Army?

Smith: When an organization receives a new kind of technology they always apply it to problems that were being addressed by the existing technologies. When the telephone was first introduced it was treated like a vocal telegraph machine. It was a device that was to be used sparingly. Psychologically people felt that the telephone should only be used when it was necessary to communicate important information very rapidly. It was not until the 1920s that that mental barrier began to breakdown and people began to see that it was ok to use the telephone for casual communication to discuss the weather, trade gossip, or maintain relationships.

Our first applications of VBS2 are very similar to what we did with AMBUSH. AMBUSH scenarios are very similar to what we did with virtual simulators. But the users of these tools are discovering new ways to apply them. One unit in Iraq used AMBUSH to reconstruct a firefight that they had been through. This allowed them to look at the situation from multiple perspectives and to better understand mistakes they had made. They also recorded a digital movie of the game play to teach those lessons to other soldiers and other units. This is similar to the use of SIMNET to reconstruct the 1991 Battle of 73 Easting. But the really unique feature is that the soldiers were able to construct this scenario themselves. It was not a multimillion dollar effort this time.

I expect that the users of these tools will discover a wealth of new applications for serious games that we could not address with traditional virtual or constructive systems because of their size, degree of access to the system, complexity of data manipulation, high costs, and other features. Hopefully these games will provide a platform for affordable, accessible, and effective training in combat medical treatment, cultural awareness, mission planning, and even vehicle maintenance. They should allow the Army to improve the training experience in schoolhouses and on the battlefield for MOS's that have traditionally not been served by LVC training systems.

TSJ: What added value can gaming bring to military training beyond what traditional simulations bring?

Smith: I think the most important features are lower cost, ease of deployment, greater access by the soldiers, and the ability of users to create or modify their own scenarios. John Carmack is the genius behind the Wolfenstein, Doom, and Quake series of games. For 15 years his id Software has always been on the leading edge of demonstrating the kind of games that can be created with the current generation of computers. In a recent talk he said that we have a 90% solution in computer graphics, networking, and several other technologies that are essential to both games and simulators.

We have reached the point where graphics and networking are no longer the key differentiators between different simulators or games. We can deliver outstanding serious games to soldiers

right now. The important features are now the ability of the customer to use these systems. Games are important because we can deploy them on a consumer-grade gaming laptop, rather than the rare and unique $1 million hardware suites that we put together in the 1990s. That means that we can afford to deploy thousands more of the systems. A box of laptops and networking gear can be shipped anywhere and set-up on almost any power grid. These two features mean that we are almost to the point where we can give a training device to every soldier in the Army. That is becoming affordable and practical.

Major General Kamiya compares serious games to the individual soldier radio. For decades the radio was reserved for commanders and pilots. But the individual infantryman did not have one. Today's technologies allow us to give a radio to every soldier. Serious games begin the process of equipping every soldier with his own simulator.

TSJ: What's new technologically that's enabling a seeming surge in interest by the military in gaming as a training tool?

Smith: Game tools that allow a soldier to create and modify his own scenarios are the enabling technology right now. These eliminate the bottleneck of a single, specially trained team that creates all scenarios for the games. These kinds of editing tools finally make it practical to turn the virtual world over to the soldier. Those tools are just getting started. I think they will become much more powerful and more intuitive in the next few years.

The PM ACTT shop at PEO-STRI and the TCM-Gaming shop at TRADOC have been doing outstanding work together to make sure the newest technologies are part of the serious games we deliver to the soldiers. We now have a contractor as part of that team and are extending this partnership out to the combat units that receive the game. If all four of these parties keep this ball rolling they are going to come up with some really powerful and amazing capabilities in these games. We should all keep our eye on what this group does in the future.

Approved for Public Release.
Security and OPSEC Review Completed: No Issues.